

CAPITAL CITY AIRPORT
(Capital City Airport State Hangar)
North side of Grand River Avenue
Lansing Vicinity
Clinton County
Michigan

HAER No. MI-320-A

HAER
MICH
19-LANOV,
1A-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
Northeast Field Area
Chesapeake/Allegheny System Support Office
National Park Service
U.S. Custom House
200 Chestnut Street
Philadelphia, PA 19106

HISTORIC AMERICAN ENGINEERING RECORD

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CAPITAL CITY AIRPORT, State Hangar

HAER No. MI-320-A

Location: Capital City Airport, West Ramp Area
Lansing vicinity, Clinton County, Michigan

UTM: 16.696210.4738570
Quad: Lansing North, 1:24,000

Date of Construction: 1939, 1947

Engineer: Guy Richardson, State of Michigan, Board of Aeronautics
Architect: Herrick and Simpson Architects of Lansing, Michigan

Present Owner: State of Michigan
Department of Transportation
Lansing, Michigan

Present Occupants: Vacant

Present Use: Vacant

Significance: The State Hangar is significant for its architectural design and methods of construction. Construction of the hangar building was financed with Works Progress Administration federal money, and resulted in a massively reinforced concrete structure, incorporating details unique to the aviation industry.

Project Information: The State Hangar is an identified airport hazard under Federal Aviation Administration (FAA) standards, and is scheduled for removal. During an environmental review (1988), the State Historic Preservation Officer determined that the building meets the criteria for inclusion in the National Register of Historic Places and, therefore, would require mitigation of the adverse effect caused by its removal. The Memorandum of Agreement (1990) stipulates documentation of the State Hangar according to HABS/HAER guidelines. This documentation was undertaken to fulfill that stipulation.

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The distinction of the Michigan state capital being located in the City of Lansing naturally resulted in an interdependence with the closest available airport. Although the early history of aviation had no tie with state government, as the industry grew in stability and technological development, many corollary services evolved. State government needs and programs responded to influences from both within the local community and from without in the form of the Federal Aviation Administration.

State hangar space at the Capital City Airport was provided in two buildings prior to the final State Hangar building. The Aero Club of Lansing and the Lansing Chamber of Commerce erected a hangar (the Club Hangar) on the already existing "landing field" in 1927, the same year that the State Administration was authorized to own and operate an airport. In less than two years the City of Lansing indicated that it wished to discontinue operation of the airport and turned this role over to the Michigan Board of Aeronautics, which was created to provide general supervision of state airports, thereby establishing the need for permanent facilities at the Lansing airport site. The Club Hangar was used by the State until it built its own hangar and Administration Building in 1935. Within a few years plans were prepared by the Board of Aeronautics for a new State Hangar to be located south of the Administration Building, and farther from the centerline of the E-W runway. Construction of this facility in 1939 required moving the Club Hangar to clear the site, and it was temporarily relocated west of the Old State Hangar. A permanent restaurant on the upper floor and offices for the newly named Department of Aeronautics on the main floor were included in the new hangar's design.

Original drawings for construction of the 1939 State Hangar are kept on file in the Michigan Aeronautics Commission's offices located on the second floor of the airport terminal building. Blueprints of the hangar, and of additions and modifications to the hangar, are on file in the Airport Authority offices located on the third floor of the airport terminal building. They have been studied and compared to the existing building to be able to describe existing conditions, as well as original construction.

The 1939 State Hangar sits on a flat site along the West Ramp oriented with the hangar opening facing due east. There are no distinguishing site features in the vicinity of the building. It occupies the site of the first Club Hangar erected at the airport in 1927, but removed from the site to allow construction of this building. Other State-owned facilities in use at the time the State Hangar was constructed included the Administration Building and the Old State Hangar, both west of the site. Two fixed base operators were located south of the site in metal hangars. There are no outbuildings associated with the State Hangar, but there were underground fuel storage tanks at the south side; these were removed in 1992 due to known leakage of the tanks.

The original drawings of the State Hangar are dated 24 April 1939. The original design is credited to Herrick and Simpson Architects from Lansing, Michigan, but it was revised and redrawn by the Michigan State Board of Aeronautics. The extent of revision to the architects' design by Aeronautics is not known. Walt Kriewall was Chief Draftsman for the Board at the time, and his initials are found on all of the drawings. Guy Richardson was Chief Engineer for the Board at the time, and he signed and approved the drawings. The Board of Aeronautics used an architect for the Administration Building, but all of the other hangar and office buildings at the West Ramp for which there are existing drawings were drawn by Aeronautics staff on paper with an Aeronautics title block. Walt Kriewall's name repeatedly shows up on documents for other West Ramp airport buildings, as either the designer or draftsman. Most of the buildings are of modest design; the State Hangar is the

most ambitious structure credited to the Aeronautics engineering staff.

Works Progress Administration (WPA) federal money financed construction of the State Hangar. Construction began in June of 1939 and was completed one year later. The Board of Aeronautics staff, which had occupied the Old State Hangar, moved into the new facility in July 1940 (Patterson 1992). The restaurant did not begin operation until 1941, when the facility in the Old State Hangar was closed (Ruth 1992). Two aerial photographs taken in 1939 document the work under construction, with the June photograph showing the prepared floor slab, and the October photograph showing installation of the roof trusses. No early photographs of the completed structure were found.

An addition to the building was executed in 1947, adding space to the restaurant at the upper floor. No further drawings were found to document later modifications to the building. The restaurant service was discontinued after the new terminal building opened in 1959, and the restaurant equipment and furnishings were removed. The Board of Aeronautics was relocated into the new Terminal Building.

The hangar space was designed as a 98'-8" x 97'-2" clear open space. The original doors were hand-built by the WPA as massive multi-leaf sliding wood panel doors that fit into thirteen foot "pockets" at either side of the opening. After the war the east elevation and door opening were modified and the doors replaced with a single upward-acting bi-fold door that reduced the width of the opening to seventy feet. Part of the reason this was done was to accommodate inside storage of one fire truck with its own upward-acting sectional door, necessary to reduce insurance rates after a fire destroyed the old hangar used by Hughes Aviation Services in 1941. A second fire at Hughes Aviation in 1948 benefited from the close proximity of the fire truck by putting out the fire quickly and containing it to the front portion of the Hughes hangars. Several years later a fire station was constructed on the north edge of the airport and the fire truck was removed from the State Hangar; however, the changes to the hangar were not reversed (Patterson 1992).

The hangar structure is heavily reinforced concrete except for the hangar roof, where five heavy timber wood trusses at 20'-0" on center span the full 98'-8" of the hangar space. 4" x 10" purlins at each vertical chord member, and at midpoints, span between the trusses and support 2" x 6" doweled and mortised wood decking. The original roof material was 3-ply felt and pitch, 190#, with a smooth surface. The roof has been maintained over the years with reapplication or replacement of the built-up roof system.

Hangars at the Capital City Airport prior to construction of the State Hangar were typically no larger than 60'-0" wide, but were anywhere from only 40'-0" long as at the Club Hangar, to 120'-0" long as at the old Hughes Hangar that burned in 1941. Using conventional heavy timber construction to span almost 100'-0" required careful engineering and assembly, and may have been unique for airport hangars in 1939. Certainly standardized plans and pre-fabricated components were geared to the more common size of a 60'-0" span. However, the small airplanes owned by the state, and by most private owners, never required the 60'-0" span. In fact, no planes generally stored there have required the substantial span provided, other than a visiting DC-3 which was brought inside during a severe hail storm to avoid the damaging hail; the wing span cleared the opening with 3 feet to spare. Reduction of the opening to 70'-0" by modification of the doors did not reduce the usefulness or adaptability of the building. The Bureau of Aeronautics, and their engineers, were looking to the future and ever-

larger airplanes being owned and maintained by the State, but this situation did not materialize.

Exterior design of the State Hangar is in the Moderne style popular for commercial buildings in the 1930s and 1940s. Strong verticality is expressed by the structural piers on the south and west elevations. Between the piers are large openings with multi-pane, metal sash windows designed to let in maximum daylight. The two-story north wing has a strong horizontal expression emphasized by a projecting overhang at the first floor. A maximum of exterior wall surface is opened up with continuous bands of metal sash windows, particularly at the two rounded ends of the wing. The finished concrete is articulated by a linear design at the parapet walls of the north and south elevations, and above the windows of the north wing. The center portion of the east elevation has been covered with metal siding and framing required for the modified door system. All of the original windows have been replaced with larger-pane extruded aluminum sash, many of which are blanked out to reduce heat gain and/or loss. Original panel wood doors have all been replaced with flush steel doors.

The State Hangar remained a viable functioning building throughout its fifty-six years of existence. Development of the new terminal in 1959 took out the need for the restaurant, but the main function as a hangar for state aeronautics activities continued to be served up until a few years ago. If it were not for the FAA regulations requiring a wider clear zone associated with the runways, the building would not be threatened with demolition.

SOURCES OF INFORMATION

A. ENGINEERING DRAWINGS

Administration Building. 1934. Michigan Board of Aeronautics. Knecht, McCarty and Thebaud, Inc. Architects, Grand Rapids, Michigan. F.S. Weber, Res. Engineer. The seven original ink on linen drawings are of excellent quality, and illustrate the intended use of the spaces. Drawings for the original construction, modification, and the control tower are on file in the offices of Capital Region Airport Authority (CRAA). This was the earliest building at the CRAA for which there are original drawings.

General Building Plan. 1934. Michigan Board of Aeronautics. Drawn by Walt Kriewall. Two drawings of existing and proposed facilities at the west ramp. Excellent quality ink on linen drawings of unusual size, 24" x 51" and 24" x 48" respectively.

100' x 100' Hanger and Two Story Wing. 1939. Michigan State Board of Aeronautics. Revised and redrawn by Walt Kriewall, approved by Guy Richardson. Original design by Herrick and Simpson Architects, Lansing, Michigan. Six drawings for the original construction, modifications, and one addition to the State Hanger are on file in the offices of the Michigan Aeronautics Commission. The six original drawings are a combination of pencil and pen and ink on vellum, with colored poch'e of material designations.

Field Development. 1939. Michigan State Board of Aeronautics. No credit to drafter or engineer. Excellent quality ink on linen drawing of unusual size, 48" x 72". Dated 1939 at the time of the initial drawing, work has obviously been added to show proposed and implemented development over a ten year period. This may be the first master plan type of drawing executed for the Capital City Airport.

B. HISTORIC VIEWS

No historic views of the State Hangar were found.

C. INTERVIEWS

Patterson, Ned. Interview with the author. Lansing, Michigan, 9 April and 7 May 1992. Ned's association with the Capital City Airport was as an employee of the Michigan Board of Aeronautics from 1940 until his retirement in 1986.

Ruth, Babe Weyant. Interview with the author. Lansing, Michigan, 7 May 1992. Babe's association with the Capital City Airport was as an aviator, flight instructor, and unofficial historian of the airport from the early 1930's until the present (1992).

D. BIBLIOGRAPHY

Ball, R.S. 1953 *A Chronology of Michigan Aviation, 1834-1953*. Lansing: Michigan Department of Aeronautics. Copies are available at the Michigan Aeronautics Commission Offices.

Michigan Aviation: 1929 -1979. MAC 50th Anniversary Association. From 1929 to 1979 - A History of the Michigan Aeronautics Commission: 47-49; 1979 - Golden Anniversary of the Ninety-Nines: 50; Chronological Highlights of Michigan Aviation 1929 -1979: 52-58; and, Michigan Notables: 61. A copy of this commemorative issue was found in the Pamphlet File in the Ann Arbor, Public Library, Ann Arbor, Michigan. The chronological highlights are edited from the R.S. Ball document listed above. There are no known additional copies.